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(71) Applicant (for all designated States except US): PACIFIC
LITHIUM NEW ZEALAND LIMITED [NZ/NZ]; 2
Mana Place, Manukau City, Auckland (NZ).

(72) Inventors; and

(75) Inventors/Applicants (for US only): DESILVESTRO,
Hans [CH/NZ]; 16 Del Mar Court, Howick, Auckland
(NZ). VAN VEEN, Casey, Ann [NZ/NZ]; 10 Ashland
Place, Manurewa, Auckland (NZ). JIANG, Nancy, Lan
[NZ/NZ]; 5-134 Onewa Road, Northcote, Auckland (NZ).

AMMUNDSEN, Brett [NZ/NZ]; 209 Piha Road, Piha,
Auckland (NZ).

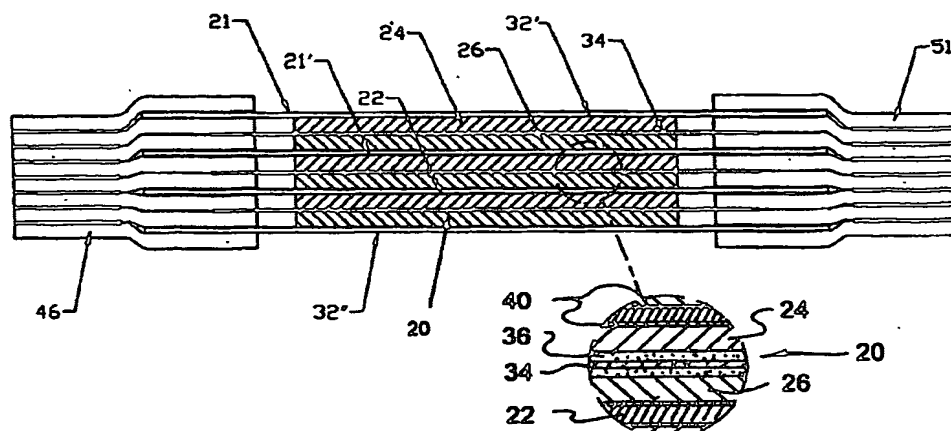
(74) Agents: OSTERTAG, Reinhard et al.; Ostertag & Part-
ner, Eibenweg 10, 70597 Stuttgart (DE).

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(54) Title: RECHARGEABLE BIPOLAR HIGH POWER ELECTROCHEMICAL DEVICE WITH REDUCED MONITORING
REQUIREMENT



(57) Abstract: The present invention is drawn to a high power electrochemical energy storage device in a bipolar configuration, comprising at least n stackable cells (20) in bipolar configuration wherein subgroups of m cells are electronically monitored (63). The storage cells (20) have a lithium ion insertion anode (24) and a lithium ion insertion cathode (26), a separator (36), an electrolyte system (36), and a leak-proof seal structure (51). A number of embodiments are disclosed, characterized by a favorable range of m values, in combination with the anode-to-cathode capacity ratio, electrolyte conductivity, and other battery key features, thereby providing a high power device providing long cycle life and excellent power performance over many thousand charge and discharge cycles while minimizing the cost for electronic monitoring. Additionally, the present invention is drawn to a device combining two or more groups of stackable cells in bipolar configuration, either in series or in parallel or any combination thereof, so as to create a high power, high voltage energy storage device.